

Please replace present claim 1 with the amended version thereof, as shown in the attached
CLEAN COPY OF THE AMENDED CLAIM.

REMARKS

Applicant respectfully requests reconsideration of this application, and reconsideration of the Office Action dated May 13, 2002 (Paper No. 21). Upon entry of this Amendment, claims 1-4 and 6-20 will remain pending in this application, with claims 2, 4, 6 and 12-14 having been withdrawn. The amendments to claim 1 are supported by the specification and original claims. No new matter is incorporated by this Amendment.

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Claims 1, 3, 7-10 and 17-20 are rejected under 35 U.S.C. §102(a) as being anticipated by Sato (U.S. Patent No. 5,519,251) or, in the alternative, under 35 U.S.C. §103(a) as being obvious based on a combination of Sato and Applicant's admitted prior art.

The Office Action maintains that Sato discloses every element of the claimed invention, or, when combined with Applicant's admitted prior art, renders the claimed invention obvious. Applicant traverses this rejection.

Applicant's invention, as described in independent claim 1, provides an electrically tested electronic device having connection pins wherein each of the connection pins includes a first end portion and a second end portion and a bend portion formed between the first and second portions, with the bend portion not being encapsulated in the resin, in order to accommodate the thermal expansion difference between the silicon die and a printed circuit board on which the electronic device is mounted. Designing the connection pins so that the intermediate bend portion is not resin encapsulated enables the connection pin to perform the intended function of accommodating the thermal expansion difference between the silicon die and a printed circuit board on which the electronic device is mounted. Applicant provides herewith as Attachment A, a computer simulated

drawing illustrating a pre-thermal expansion and post-thermal expansion state and the manner of accommodation thereof by the intermediate bend portion of the pin. Neither Sato nor the prior art discussed in the present invention teaches or fairly suggests the claimed combination of the present invention which features an intermediate bend portion that is not encapsulated with resin.

As discussed in Applicant's last Response, all of the embodiments described by Sato have the pre-formed or pre-bent portion encapsulated in the resin package. Applicant again respectfully directs the Examiner's attention to the discussion in Sato at column 10, lines 32-42, which states:

"However, if the external terminals 16 do not extend outwardly of the package 31 and is [sic] substantially embedded within the package 31, it is desirable to take some kind of measure to increase the strength of the semi-conductor device with respect to the stress which will be generated by the difference between the coefficients of thermal expansion of the leads 14 and the circuit substrate 48 on which the semiconductor device is mounted. Hence, this embodiment increases the surface area of the bottom surface 16a of the external terminal 16 to increase the strength. In addition to increasing the strength, it is possible to facilitate the coating of an adhesive agent on the external terminal 16..."

Accordingly, the pre-formed or pre-bent portion of Sato, which is externally embedded in the device of Sato for the reasons set forth in the reference, is not involved in any way in thermal expansion difference accommodation. Moreover, none of the embodiments described a device wherein the connection pins include a first end portion and a second end portion and a bend portion formed between the first and second portions, with the bend portion not being encapsulated in the resin. In contrast, Sato discloses fully encapsulating the terminal with the exception of an exposed bottom surface of the distal end of the terminal. See, for example, lines 42-46 of the Summary of the Invention. Sato teaches that this feature (encapsulating the terminal in the resin) is a specific object of his invention. See id., line 35.

There is nothing in the Sato nor the prior art discussed in the present specification which teaches or fairly suggests an electrically tested electronic device having connection pins wherein

each of the connection pins includes a first end portion and a second end portion and a bend portion formed between the first and second portions, with the bend portion not being encapsulated in the resin, in order to accommodate the thermal expansion difference between the silicon die and a printed circuit board on which the electronic device is mounted. Accordingly, Sato cannot anticipate the claimed invention. Moreover, Sato combined with the prior art described in the present invention fail to render the claimed invention obvious.

The amendment to claim 1 and above remarks overcome these two rejections. Thus, reconsideration and withdrawal of this rejection are respectfully requested.

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Claims 11, 15 and 16 are rejected under 35 U.S.C. §103(a) as being considered obvious based on a combination of Sato and Applicant's admitted prior art, and further in combination with McShane (U.S. Patent 5,311,057). Applicant again traverses.

The deficiencies of Sato and Applicant's admitted prior art have been discussed above. Furthermore, McShane fails to remedy these deficiencies. Neither Sato nor McShane teach or fairly suggest connection pins each including a first end portion and a second end portion and a bend portion formed between the first and second portions, with the bend portion not being encapsulated in the resin, to accommodate the thermal expansion difference between the silicon die and a printed circuit board on which the electronic device is mounted. The "admitted prior art" also fails to teach or fairly suggest this element of Applicant's invention. Moreover, there is nothing in the prior art of record that would motivate one of ordinary skill in the art to modify the teachings of Sato or McShane to incorporate this element of Applicant's invention.

The amendment to claim 1 and above remarks overcome this two rejections. Thus, reconsideration and withdrawal of this rejection are respectfully requested.

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Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding objection and rejections in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

If any fees under 37 C.F.R. §§ 1.16 or 1.17 are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300; Order No. 033655.002.

If an extension of time under 37 C.F.R. § 1.136 is necessary that is not accounted for in the papers filed herewith, such an extension is requested. The extension fee should be charged to Deposit Account No. 02-4300; Order No. 033655.002.

Respectfully submitted,
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